299-E33-79 (A6887)

Log Data Report

Borehole Information:

Borehole: 299-E33-79 (A6887)			Site: 216-B-8 Crib		
Coordinates (WA St Plane)		GWL (ft)[1]: n/a[2]		GWL Date: n/a	
North	East	Drill Date	TOC[3] Elevation	Total Depth (ft)	Type
137478.417 m	573794.243 m	10/48	639.21	12	Cable tool

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Steel (welded)	3.7	8.625	8.0	0.3125	0	12

Borehole Notes:

The casing information (reference at ground surface) provided above is derived from *Hanford Wells* (Chamness and Merz 1993). The casing size information for the 8-in. steel casing is confirmed from tape and caliper measurements collected in the field by MACTEC-ERS personnel. The coordinates and TOC elevation are derived from the HWIS[4].

Logging Equipment Information:

Logging System:	Gamma 2B		Type: SGLS (35%)
Calibration Date:	11/01	Calibration Reference:	GJO-2002-287-TAR
		Logging Procedure:	MAC-HGLP 1.6.5

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2	3	4	5
Date	01/29/02				
Logging Engineer	Spatz				
Start Depth (ft)	15.0				
Finish Depth (ft)	4.0				
Count Time (s)	100				
Live/Real	R				
Shield (Y/N)	N				
MSA Interval (ft)	1.0				
ft/min	n/a				
Pre-Verification	A0069CAB				
Start File	A0070000				
Finish File	A0070022				
Post-Verification	A0071CAA				

Logging Operation Notes:

Spectral gamma logging was performed in this borehole during January 2002 in a single day. Logging measurements are referenced to the top of the 8-in. casing. No repeat section was collected in this borehole.

Analysis Notes:

Analyst:	Henwood	**Date:**	02/11/02	**Reference:**	MAC-VZCP 1.7.9, Rev. 2

Pre-run and post-run verification spectra met acceptance criteria. The pre-run verification was used for the energy and resolution calibration necessary to process the data.

Casing corrections for 0.3125-in.-thick casing were applied for the 8-in. steel casing.

Log spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with an EXCEL worksheet template identified as G2BNOV01.xls using an efficiency function and corrections for casing and dead time as appropriate.

Log Plot Notes:

Separate log plots are provided for the man-made radionuclide (^{137}Cs) detected in the borehole, naturally occurring radionuclides (^{40}K, ^{238}U, ^{232}Th [KUT]), and a combination of man-made, KUT, and dead time. For each radionuclide, the energy value of the spectral peak used for quantification is indicated. Unless otherwise noted, all radionuclides are plotted in picocuries per gram (pCi/g). The open circles indicate the minimum detectable level (MDL) for each radionuclide. Error bars on each plot represent error associated with counting statistics only and do not include errors associated with the inverse efficiency function, dead time correction, casing corrections, or water corrections.

Results and Interpretations:

^{137}Cs was the only man-made radionuclide detected in this borehole. ^{137}Cs was detected between 4 and 8 ft and at about 15 ft in depth. The maximum concentration was about 100 pCi/g at 4.5 ft.

The KUT concentrations do not change significantly in this short borehole.

References:

Chamness, M.A., and J.K. Merz, 1993. *Hanford Wells*, PNL-8800, UC-903, Pacific Northwest Laboratory, Richland, Washington.

[1] GWL – groundwater level
[2] n/a – not applicable
[3] TOC – top of casing
[4] HWIS – Hanford Well Information System

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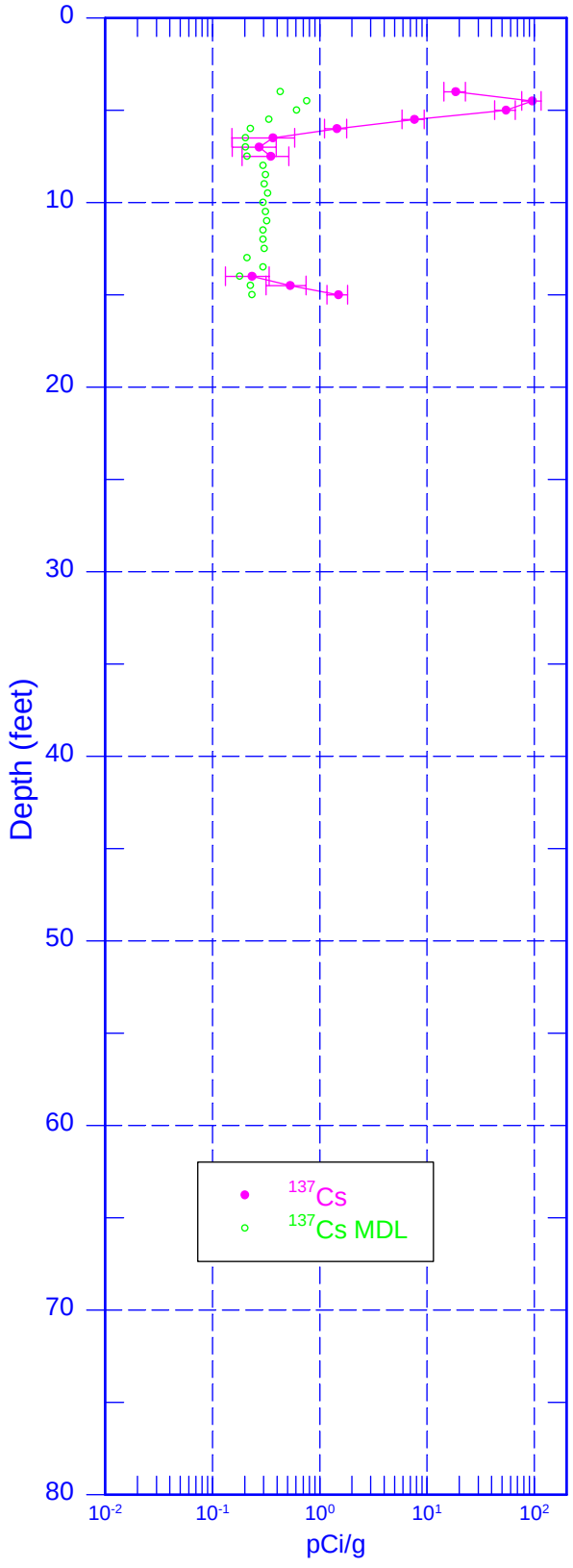
Man-Made Radionuclide Concentrations



Log Date - 01/29/02

Reference - Top of Casing

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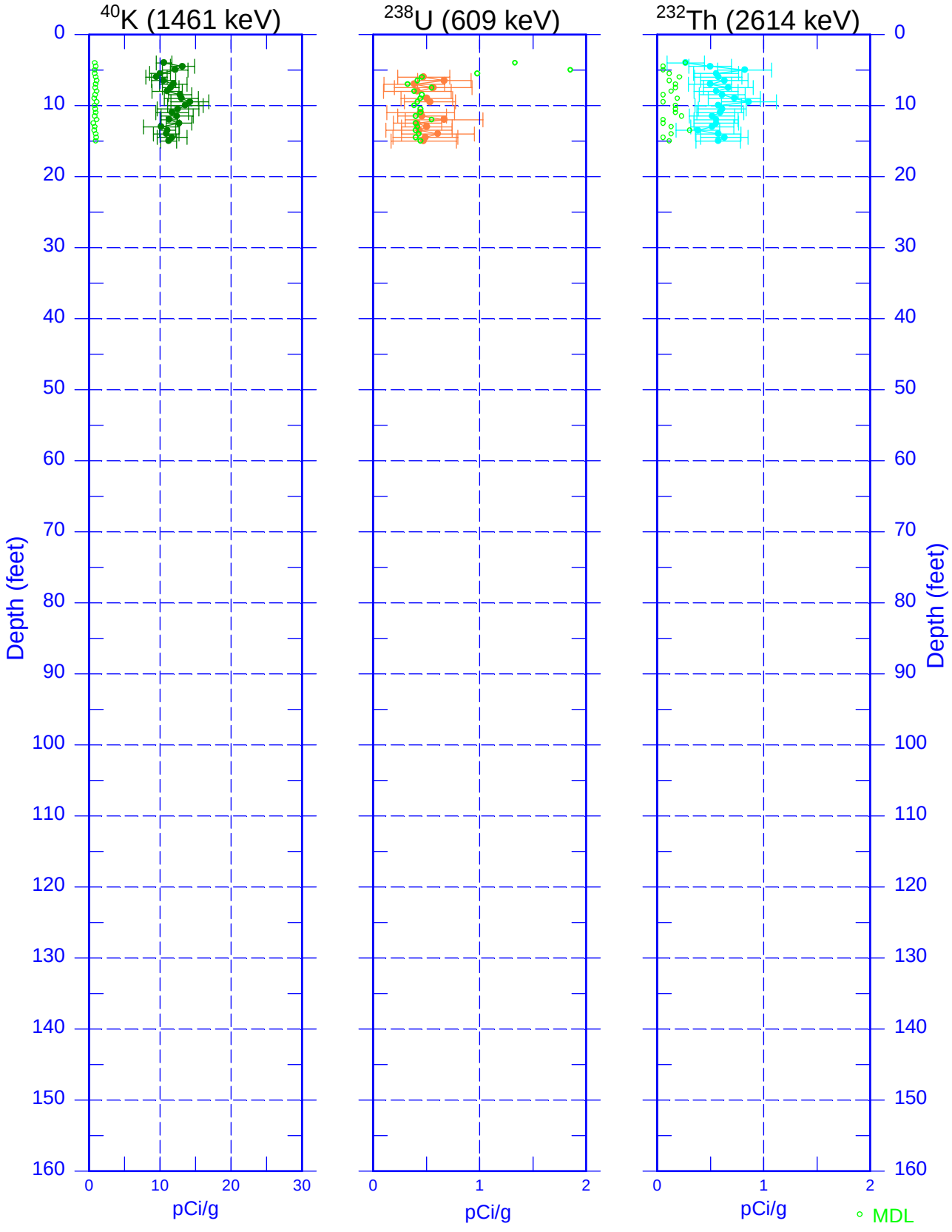
Natural Gamma Logs



Log Date - 01/29/02

Reference - Top of Casing

299-E33-79 (A6887) Combination Plot